CONTENTS:

	Page
SPECIFICATIONS	15
INSTALLATION AND START-UP	16.17
DESCRIPTION OF THE CONTROL PANEL	18.19
DESCRIPTION OF THE PNEUMATIC PANEL	20
MACHINE OPERATION	21.22.23
MAINTENANCE	24.25.26.27

■ SPECIFICATIONS ■

DIMENSIONS

HEIGHT:	1200 mm
WIDTH:	690 mm
DEPTH:	560 mm

POWER CONSUMPTION:	2500 W
VOLTAGE:	230 V
FREQUENCY:	50/60 Hz
WEIGHT:	110 Kgs

CHARACTERISTICS

VACUUM LEVEL:	- 0.8 BARS
MAX. PRESSURE:	3.5 BARS
MAX. MELT TEMPERATURE:	1600°c
MAX. MELTING CAPACITY:	60 Grs
CASTING RING DIMENSIONS:	Min. Ø 30 x 55 mm Max. Ø 100 x 80 mm
GAS:	ARGON

ACCESSORIES

. 4 INDUCAST CASTING RINGS IN STAINLESS STEEL WITH A FLEXIBLE PLASTIC BOTTOM (1X . 3X . 6X . 9X)
. 2 KITS FOR STELLITE, COMPOSED OF TWO FLEXIBLE PLASTIC FLASKS AND 1 PVC ENDPIECE
. 1 "LARGE-MODEL" STELLITE KIT, COMPOSED OF TWO FLEXIBLE PLASTIC FLASKS AND 1 PVC ENDPIECE
. 1 VITRIFIED CARBON INSERT.
. 3 WHITE "SILICON DIOXIDE" CRUCIBLES,
. 3 GREY "SILICON CARBIDE" CRUCIBLES
. 1 RING CLAMP
. 3 SILICONE CASTING RINGS (1X . 3X . 6X) with FLEXIBLE ENDPIECE (3X-6X-9X)
. 1 "umbrella" POURING FUNNEL (top-fed)

■ INSTALLATION AND START-UP ■

When unpacking, check that the machine is in perfect condition and report any damage to the shipper and supplier.

After noting any reservations you may have on the shipping bill, remember to have the deliveryman countersign it and to confirm your reservations by registered letter with acknowledgement of receipt.

■ INSTALLATION:

► Place the machine on a flat surface.

► Make sure to leave a space of about 5 cm between the back of the INDUCAST machine and any wall or partition in order to allow room for the pneumatic connection (compressed air and argon) and for proper ventilation of the machine.

► Before turning the machine on, **make absolutely certain** you have filled the water tank.

To fill the tank:
. Remove the 4 plastic plugs located on the lower front panel.
. Unscrew the 4 screws on the panel using a Phillips screwdriver.
. Dismount the panel.
. Remove the water pump located on top of the gray tank after having unplugged it from its power socket.
. **Pour 20 liters of water into the tank** and then put the pump back in place, taking care to tighten the clamping collar.

. IMPORTANT: Do not forget to reconnect the water pump to its socket.
. Mount the front panel, then tighten the 4 screws and insert the 4 plugs over the screw holes.

► After checking that the mains voltage matches that noted on the manufacturer's plate, plug the cord into a 10/16A socket fitted with a ground terminal.

► The machine's pneumatic supply requires no lubrication (dry air at a minimum 3.5-bar pressure).

IMPORTANT: INDUCAST is equipped with a sensor which monitors the pressure supply. If there is not at least 2 bars pressure at the feed side of the circuit, the machine will not operate.

► Connect the compressed air supply to the machine and check on the pressure controller to left of the cover that the pressure is approximately 3.5 bars.

► If not, pull the adjustment knob up to release it.

► Adjust the pressure and then press down on the knob to lock it back into position.

NOTE: If the connection between the machine and the laboratory piping is rigid, we recommend using copper tubing at least 8/10 in diameter, to ensure uniformity in the installation pipework.

IMPORTANT: Take care not to reverse the Compressed Air and Argon connections.

INDUCAST does not necessarily require the use of argon.

This casting machine is designed to operate perfectly either with or without an argon gas supply.

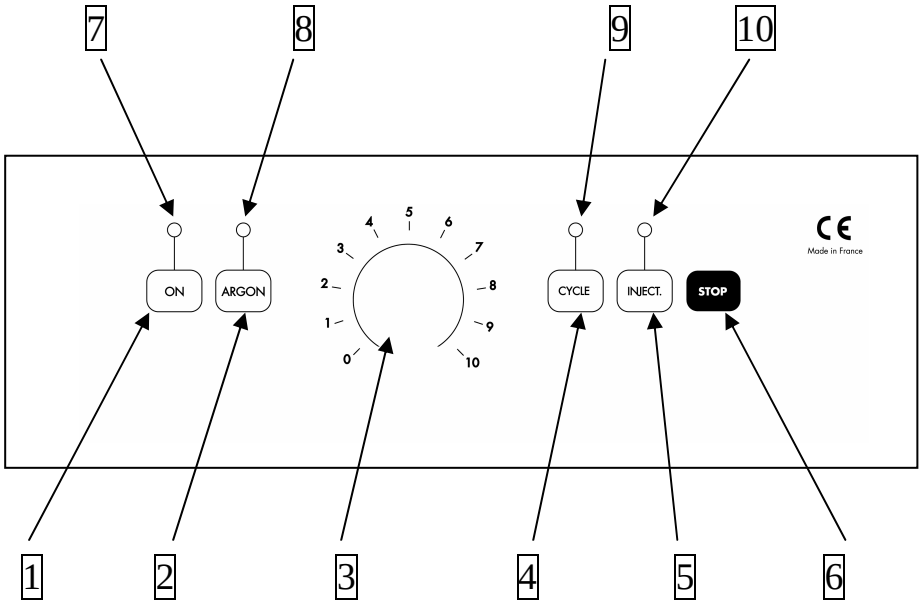
Using ARGON:

Different grades of gas may be used, primarily industrial-grade "U" ARGON and "NERTAL".

These products are supplied in 4 and 10-m^3 cylinders, fitted with the requisite regulators (0 to 3 bars).

► Connect the argon source at the point indicated on the back panel of the machine and set the regulator on the cylinder for 1 bar.

■ DESCRIPTION OF THE CONTROL PANEL ■



1 **ON** button
To turn the power on.

2 **ARGON** cycle control button
This cycle must be selected before starting the cycle.

3 Power control dial
To change the melting time and maximum temperature (monitored visually by the operator).

4 CYCLE button
To initiate melting and tank evacuation.

5 INJECT button

To turn the tank over once the alloy has reached the proper temperature (the operator determines the appropriate moment for injection).

6 STOP button

To suspend the course of the cycle at any time.
The program is reset to zero and the **ON** indicator light flashes.

7 **ON** indicator light

Remains lit during and after the cycle (without pressing the **STOP** button). If the **STOP** button is pressed, it flashes for roughly 2 minutes and then goes out (at which point the power is off).

8 **ARGON** indicator light

Stays lit only during an argon cycle.

9 **CYCLE** indicator light

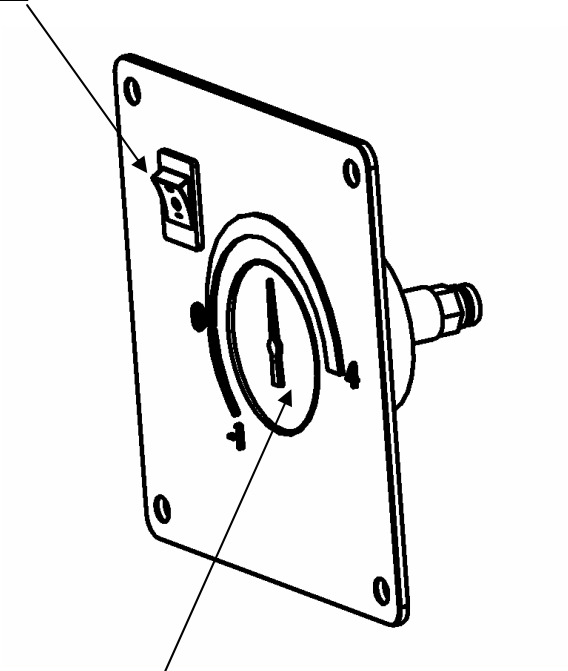
Indicates that the program has begun. It stays lit until casting is complete.

10 **INJECTION** indicator light

Lights during injection and stays lit until the end of the cycle.

■ DESCRIPTION OF THE PNEUMATIC PANEL ■

INTER 3positions
Position **0** = without vacuum
Position **1** = with regular vacuum
Position **2** = vacuum maxi



GAGE MEASURING tank pressure and vacuum.
(from – 0.8 bar to 3.5 bars).

■ MACHINE OPERATION ■

■ DESCRIPTION OF THE "STANDARD" PROGRAM

. Turn the machine on by pressing and holding down the **ON** button for roughly 2 seconds (the indicator light goes on).

. Position the crucible containing the alloy.

. Position the casting ring (centered over the crucible). To make sure the ring is properly centered, rotate it slightly on its axis.

. Close and lock the tank.

. Close the sliding cover (the cycle cannot begin unless the cover is closed).

. Press **CYCLE**.

. The melting and vacuum (- 0.8 bars) cycle begins. This is a semi-automatic cycle, in which the operator determines the appropriate moment for injection.

. Press **INJECT**

. The tank turns over and compressed air (3.5 bars) is injected.

. The tank remains upside down for ≈ 1 minute.

. The tank returns to its initial position and to atmospheric pressure.

. Open the sliding cover.

. Unlock and open the tank.

IMPORTANT: Avoid leaving the crucible inside the tank after a casting cycle.

N.B.: Once the cycle is completed, do not press the **STOP** button; the machine will stay on and a new cycle may be started.
Otherwise, the indicator light will begin flashing and the machine will stay on for 2 minutes. Thereafter, to begin a new cycle, you will need to press the **ON** button again (for 2 seconds).

■ DESCRIPTION OF THE "ARGON" PROGRAM

INDUCAST features a special function enabling castings to be carried out in an argon gas vacuum. To confirm that option, the operator selects the "ARGON" button on the control panel.

. Turn the machine on by pressing and holding down the **ON** button for roughly 2 seconds (the indicator light goes on).

. Position the crucible containing the alloy.

. Position the casting ring (centered over the crucible). To make sure the ring is properly centered, rotate it slightly on its axis.

. Close and lock the tank.

. Close the sliding cover.

. Press **CYCLE**.

. The melting and vacuum cycle begins.

. As soon as the proper vacuum level has been reached (- 0.8 bars), ARGON is injected for roughly 2 seconds.

. The vacuum cycle begins again until the - 0.8-bar pressure setpoint is reached.

N.B.: During the last three phases, melting continues.
This is a semi-automatic cycle, in which the operator determines the appropriate moment for injection.

. Press **INJECT**

. The tank turns over and compressed air (3.5 bars) is injected.

. The tank remains upside down for ≈ 1 minute.

. The tank returns to its initial position and to atmospheric pressure.

. Open the sliding cover.

. Unlock and open the tank.

IMPORTANT: Avoid leaving the crucible inside the tank after a casting cycle.

N.B.: Once the cycle is completed, do not press the **STOP** button; the machine will stay on and a new cycle may be started.
Otherwise, the indicator light will begin flashing and the machine will stay on for 2 minutes. Thereafter, to begin a new cycle, you will need to press the **ON** button again (for 2 seconds).

■ MAINTENANCE ■

Aside from cleaning the outside panels (without solvents), maintenance of the INDUCAST machine involves only a few simple operations:

► Clean the tank cover gasket with alcohol regularly, to make sure it lasts longer and keeps a tight seal.

► Clean the inside of the tank (compressed air) from time to time.
Follow the procedure below:

. Turn the machine off.
. Lock the tank .
. Remove the front guard by opening the two catches at the top.
. Rotate the tank (≈ 60°) by hand.
. Remove the 4 screws attaching the bottom of the tank.
. Clean the gasket with alcohol if needed and then the inside of the tank, taking care not to damage the self-induction coil.
. Then repeat the procedure in reverse to reassemble the various components.

IMPORTANT: When repositioning the front guard, first center the lower edge, holding the two catches open. Raise the guard and then release the catches, checking that they lock in place on the panels on either side.

► Clean the dust filter located on the left side of the machine once a year.
Follow the procedure below:

. Turn the machine off.
. Remove the front guard by opening the two catches at the top.
. Remove the 3 fixing screws on the back of the machine, as well as those on the inside of the motor casing (left-hand side of the machine) .
. Lift and remove the guard.
. Rotate the transparent filter bowl (located immediately next to the tank bearing) and then disengage it by sliding it downward.
. Clean the filter and then repeat the procedure in reverse to reassemble the various components.

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